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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,533	08/15/2005	Yoshitomo Masuda	Q83413	8947

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EXAMINER	
LESTER, EVELYN A	
ART UNIT	PAPER NUMBER
2873	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/506,533	MASUDA ET AL.	
	Examiner	Art Unit	
	Evelyn A. Lester	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *17-31* is/are allowed.

6)☒ Claim(s) *1-5,7 and 11-16* is/are rejected.

7)☒ Claim(s) *6 and 8-10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 September 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/04;12/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 9-3-04 and 12-1-05 were filed before the mailing date of this office action. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the Examiner has considered the information disclosure statement.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

4. Claims 6, 7, 25 and 26 are objected to because of the following informalities:

In the indicated claims, there is a confusing use of parenthesis. It is unclear whether the claim language, contained in the parenthesis, is part of the claimed invention or not. It is suggested that the parenthesis be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 7, 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites a "solvent insoluble rate of the liquid powder," and provides a "formula" to define this solvent rate. However, it recites that the liquid powder is immersed in a solvent, therein the rate relates. Yet there is no solvent in the claimed invention, so it is unclear and confusing how this solvent insoluble rate relates to the claimed invention. Also, there is a no antecedent for "the solvent. Further, the metes and bounds of the relative term "good" in line 6 of claim 7, are unclear.

Claim 15 recites the limitation "the partition wall" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "the image" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-3, 5, 12, 14 and 16 are rejected under 35 U.S.C. 102(a) and 102(e) as being anticipated by Matsunaga et al (U.S. Patent Pub. 2002/0051280 A1).

Matsunaga et al disclose the claimed invention of an image display device (10) comprising a liquid powder composed of a solid material stably floating as a dispersant in a gas, which exhibits a high fluidity in an aerosol state, and is sealed between opposed substrates (12,14), wherein at least one substrate is transparent, and the liquid powder is moveable. Please note Figure 1 and its accompanying text, as well as the invention Summary in column 1, line 60 to column 2, line 31; also column 4, lines 13-67 to column 5, lines 1-3.

With respect to claim 2, please note Figure 1.

With respect to claim 3, it is considered to be inherent to the nature of "dispersing" particles, that the "apparent" volume will increase at least two fold when activated is a dispersed state.

With respect to claim 5, please note column 4, lines 38-39 and 44.

With respect to claim 12, please note for example at column 2, lines 32-40.

With respect to claim 14, please note column 4, line 19.

7. Claims 1-3, 5, 11, 13, 14 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Sakamaki et al (U.S. Patent 6,842,278 B1).

Sakamaki et al disclose the claimed invention of an image display device (Figure 25 or 29) comprising a liquid powder composed of a solid material stably floating as a dispersant in a gas, which exhibits a high fluidity in an aerosol state, and is sealed between opposed substrates (50a,52a), wherein at least one substrate is transparent, and the liquid powder is moveable. Please note Figures 25 and/or 29, for example, and their accompanying text; also note Sakamaki et al claims 1 and 9, for example.

With respect to claim 2, please note Figures 3D and 25/29, for example.

With respect to claim 3, it is considered to be inherent to the nature of "dispersing" particles, that the "apparent" volume will increase at least two fold when activated is a dispersed state. Please note Figure 25 or 29, for example.

With respect to claim 5, note column 12, lines 14-15, and lines 42-43.

With respect to claim 11, please note Figure 1, and column 10, lines 64-67 to column 11, lines 1-6.

With respect to claim 13, please note Figures 3D and 29, for example; and at column 10, lines 58-59.

With respect to claim 14, the spacer elements (60) are "partitions walls." Though how an element is made is not germane to the patentability of the device, it is noted that Sakamaki et al disclose the claimed methods of forming, as noted for example at column 5, lines 39-52.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga et al (U.S. Patent 6,587,254 B2).

Matsunaga et al disclose the claimed invention, except for specifically teaching that the display device is formed of a plurality of display cells. It would have been obvious to one having ordinary skill in the art at the time the invention was made to , since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1, 3 and 12-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 7, 11 and 14-16 of copending Application No. 10/520,465 (US 2005/0285500 A1). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed inventions of both applications are but obvious variations of each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

In both of the applications, the claimed invention at least recites an image display device characterized in that a liquid powder composed of a solid material stably floating as a dispersant in a gas and exhibiting a high fluidity in an aerosol state is sealed between opposed substrates, at least one substrate being transparent, and the liquid powder is moved. Therefore the co-pending application claimed invention anticipates the claimed invention of the application.

11. Claims 1, 3-5 and 16 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 25, 29, 32, 35, 37, 39 and 40-42 of copending Application No. 10/518,750 (US 2006/0087479 A1). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed inventions of both applications are but obvious variations of each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

In both of the applications, the claimed invention at least recites an image display device characterized in that a liquid powder composed of a solid material stably floating as a dispersant in a gas and exhibiting a high fluidity in an aerosol state is sealed between opposed substrates, at least one substrate being transparent, and the liquid powder is moved. Therefore the co-pending application claimed invention anticipates the claimed invention of the application.

12. Claims 1 and 3-5 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 18 and 23-26 of copending Application No. 10/521,237 (US 2006/0087489 A1). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed inventions of both applications are but obvious variations of each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

In both of the applications, the claimed invention at least recites an image display device characterized in that a liquid powder composed of a solid material stably floating as a dispersant in a gas and exhibiting a high fluidity in an aerosol state is sealed between opposed substrates, at least one substrate being transparent, and the liquid powder is moved. Therefore the co-pending application claimed invention anticipates the claimed invention of the application.

13. Claims 1 and 16 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 19 and 28 of copending Application No. 10/539,381 (US 2006/0231401 A1). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed inventions of both applications are but obvious variations of each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

In both of the applications, the claimed invention at least recites an image display device characterized in that a liquid powder composed of a solid material stably floating as a dispersant in a gas and exhibiting a high fluidity in an aerosol state is sealed between opposed substrates, at least one substrate being transparent, and the liquid powder is moved. Therefore the co-pending application claimed invention anticipates the claimed invention of the application.

14. Claims 1 and 3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 5 of copending Application No. 10/518,750 (US 2006/0087479 A1). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed inventions of both applications are but obvious variations of each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

In both of the applications, the claimed invention at least recites an image display device characterized in that a liquid powder composed of a solid material stably floating as a dispersant in a gas and exhibiting a high fluidity in an aerosol state is sealed between opposed substrates, at least one substrate being transparent, and the liquid

powder is moved. Therefore the co-pending application claimed invention anticipates the claimed invention of the application.

Allowable Subject Matter

15. Claims 7 and 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

16. Claim 6 would be allowable if rewritten to overcome the objections for minor informalities, set forth in this Office action.

17. Claims 8-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

18. Claims 17-31 are allowed.

19. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not show or fairly suggest the claimed subject matter/invention of an image display device having the claimed structure and claimed limitations, wherein a rejection under 35 USC 102 or 103 would be improper. Please particularly note the combination of claimed elements and claimed limitations, including as recited

in claim 6, wherein a particle size distribution Span of the particle material constituting the liquid powder, which is defined by the following formula, is not more than 5: Span = (d(0.9) - d(O. 1))/d(0.5) ; here, d(0.5) means a value of the particle size expressed by ~m wherein an amount of the particle material constituting the liquid powder having the particle size larger than this value is 50% and an amount of the particle material constituting the liquid powder having the particle size expressed by μm wherein an amount of the particle material constituting the liquid powder having a particle size smaller than this value is 10%, and d(0.9) means a value of the particle size expressed by μm wherein an amount of the particle material constituting the liquid powder having the particle size smaller than this value is 90%; as recited in claim 7, wherein a solvent insoluble rate of the liquid powder, which is defined by the following formula, is not less than 50%: solvent insoluble rate (%) = (B/A) x 100; here, A is a weight of the liquid powder before being immersed into the solvent and B is a weight of resin components after the liquid powder is immersed into good solvent at 25°C for 24 hours; as recited in claim 8, wherein the liquid powder is a material, a surface of which is bonded by inorganic fine particles having an average particle size of 20 - 100 nm; as recited in claim 15, wherein the partition wall has a cantilever structure; and as recited in claim 17, an image display device characterized in that a porous spacer is arranged between opposed substrates, at least one substrate being transparent, a liquid powder composed of a solid material stably floating as a dispersant in gas and exhibiting a high fluidity in an aerosol state is sealed, and the liquid powder is moved.

Therefore, the claimed subject matter/invention is considered to be allowable as being novel and nonobvious over the prior art.

Conclusion

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evelyn A. Lester whose telephone number is (571) 272-2332. The examiner can normally be reached on M-F, subject to an increased flex schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky L. Mack can be reached on (571) 272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Evelyn A. Lester
Primary Examiner
Art Unit 2873